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EDITED BY WILLIAM HUNTING, F.R.C.V.S.

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EDITORIAL NOTES.

We have this week given a good deal of space to an extract which contains the opinions of the leading veterinarians of Scotland on pleuro-pneumonia. No subject is now of greater practical importance than the bovine disease which seems to defy our attempts to stamp it out, and it is very necessary that we should all arrive at a correct understanding of its nature, and of the principles concerned in its eradication. The difference between our members seems to be confined almost entirely to the value to be placed upon inoculation. No one denies the possibility of getting rid of the plague by well organized compulsory slaughter of all affected herds, but it is argued by a strong section of the profession that this method is expensive, and that success and economy would result from a combination of slaughter and inoculation. Professor M'Call's paper and the discussion which followed covers the whole ground. Every argument is well put and every practical veterinarian may draw his own conclusion from the evidence adduced. We think Professor McCall has stated his case fairly, marshalled his facts with great skill, and drawn his conclusions logically. The effect left on our mind is that only one safe and sound method of combating pleuro-pneumonia in this country exists—compulsory slaughter of all infected herds. The difficulty is the detection of *all* infected stock and the prevention of all movement of animals out of an infected area. Probably nothing less than the extreme strictness of the regulations enforced for cattle plague will be effective, and this requires that local authorities shall be under the direct control of the central authority. An amendment of the Contagious Diseases (Animals) Act will be requisite before this can be carried out, and we hope that next session of Parliament will see the necessary change.

There are two invaluable formulæ for obstructing progress whenever any change is proposed—"The time has not arrived" and "See what it will lead to." The great beauty of these two sentences is that they remove the necessity of showing that the proposed change is bad in itself, or that it is not required. We may grant that a change would be beneficial, and that it is wanted, but we can then quietly postpone it by sententiously announcing that 'the time has not arrived,' or we may frighten all the timid folk by painting a fancy picture of the dreadful things that may result. It is even good tact not to definitely mention these, but to merely suggest them by a vague insinuation that something dreadful may be expected. Merely asking the question, What will it lead to? if a proper gravity of face and profundity of manner be assumed, is enough to frighten some men from attempting any reform. Every collective body contains men who flatter themselves that they are cautious when they are really nervous and short-sighted. They seem to fancy that whatever exists must be good, and that to alter it is equivalent to injuring it.

These ideas are suggested to us by the reception accorded by some of our leading men to the proposals for change recently formulated by some of the Veterinary Medical Associations. We must keep the subject of Veterinary politics before us. Our Associations must not cease to discuss them. Wherever agreement upon any important matter can be effected a resolution should be passed and a copy of such resolution forwarded to the Council. The vitality of the profession is evidenced by the activity of the Associations, and these bodies are the chief centres of our intellectual movements. Our besetting sin is apathy, and our only chance of applying the spur is when we meet at our various societies. If we desire to keep moving—to advance with the times—we must use every opportunity that presents itself for bringing under the notice of Council the weak points in our organisation, and for suggesting the easiest and best methods of remedying them.

It by no means follows that because these suggestions are not immediately accepted by our Council they are therefore wasted. We are farther forward with a definite suggestion under criticism than with a want stated or simply an objection raised: moreover, there is a tendency in most minds to absorb other men's facts and ideas and to assimilate them, and here again the members score by an early statement of their views.

ARTICLES AND CASES.

FISTULOUS WITHERS.

By Harry Olver, F.R.C.V.S., Tamworth.

The above disease is of comparatively frequent occurrence in most practices; it is often troublesome and intractable, and not unfrequently requires surgical interference of a more or less serious nature. In placing on record a fatal case I do not attempt to advance anything new as to the diseased condition itself; but think the history attending the case (which is well authenticated) is worthy of note, as showing the length of time that may elapse from the first lesion occurring before any serious effects are evinced; also as an evidence of the amount of mischief that may be in existence in parts of comparatively small importance without any marked symptoms presenting themselves. And further, of the danger of operating on such animals, not only to the patient but to the operator and his assistants, and those who may have the dressing of the wounds afterwards.

The subject in this case was a light-legged cart mare, thirteen years old, the property of J. N., Esq. She was bought as a two-year-old, and has never been out of the owner's possession from that time. She was described as a particularly keen worker, generally doing more than her share, but had never had a day's illness to prevent her taking her place in the team on the farm until about ten days prior to my seeing her, which was on Sept. 22nd, of the present year. I then found a large fluctuating swelling on the top of the wither, which had partially broken the previous night, and from which was exuding the usual unhealthy ichorous discharge found in deep-seated fistulous wounds. The swelling was somewhat considerable, and painful. I made a free opening, advised my client that it was a very serious case, and arranged for the mare to be sent into my Infirmary the following day, to be operated on when thought advisable. Subsequently I learnt from the waggoner (an old and trusty servant, corroborated by his employer) that early in the spring of 1886 the chesnut mare was hooked to a steam thrashing machine, and being left whilst other horses were fetched, had done her best to move the machine herself. On the following day she was slightly lame on the off fore leg, a small lump arose on the withers, and she stood with the leg and foot pointed forwards. This continued the whole time (3½ years) until the swelling broke, just before I saw her. The swelling I learnt varied in size from time to time, and had been "bathed with salt and water, rubbed with oils, &c." The slight lameness at starting continued but she worked sound. She never bore any weight on that leg when standing still.

On Sept. 25th, two days after admission (during which time she had been almost constantly bathed with warm water) the mare was cast and put under chloroform. On making a free opening the dorsal spines were found to be extensively diseased, with sinuses running in several directions. One went under the scapula on the near side, along and through this a seton was passed, coming out nearly at the point of the shoulder in front. The whole surface was washed out with carbolised lotion, and the mare liberated. Considerable inflammation followed the operation; fomentations and carbolised dressing were persistently applied, but septic poisoning had evidently taken place. The third day after the operation we found it necessary to put her in slings, but on the fifth day, Sept. 30th, she died.

An autopsy revealed the most extraordinary lesions—sinuses ran in all directions. Upon and about the long dorsal spines was a large cavity containing quarts of purulent fluid, in which were floating pieces of exfoliated bone as large as walnuts (which had become detached from the superior spinous process of the dorsal vertebræ) with flakes of inspissated pus and other debris; the effluvium from which is better imagined than described.—No wonder the poor brute died! But what a marvel she lived and worked so long!

The interest to us did not end with her death. I performed the operation on the withers with, I believe, a perfectly whole skin, but some days after, a swelling on the back of my left hand, considerable pain up the arm, and swelling and a painful condition of the axillary glands, told its own tale. I had become inoculated with the septic material from the fistulous wound. My hand was soon better, but my assistant who helped in the operation and afterwards dressed the wound had an abrasion on the skin of his hand. One considerable abscess and other smaller ones formed, he suffered severely and was incapacitated for work, and under medical treatment for some time. My groom and the boy who helps him, both of whom had had something to do with washing or dressing the mare, were similarly affected, but to a less extent.

Altogether the case was one of more than passing interest to us, and I thought the history of the case the length of time that more or less mischief must have been going on, the quickly fatal result, and the effect on all who attended her might be of interest to some of the readers of "The Veterinary Record."

EXTENSIVE DISEASE OF LARYNX.

By Jno. B. Wolstenholme, M.R.C.V.S., Manchester.

April 17th, 1889. Sent for to a case of difficult breathing, and found the dyspnœa so acute from laryngeal obstruction, that I put a tracheotomy tube in at once.

From several causes not necessary to detail, the tube broke in the trachea next morning, and I had the patient destroyed.

The above occurred in a cart mare eight or nine years old, in excellent condition. The attack came on suddenly whilst at work on the morning of the 17th and rapidly increased in intensity until all the symptoms of imminent suffocation were present.

In a very short time after tracheotomy the mare was quiet and cheerful, and ate bran mash as though nothing had happened.

About two years ago she had an attack of acute laryngitis, and was thought to have completely recovered; there was no difficulty in breathing, and her driver, though strictly questioned, says that "he never heard her make a noise until the morning of the 17th."

The work she was employed at was coal carting; the load about two tons, of which she would take six loads daily.

On *post-mortem*, the larynx was found to be unusually large, and abnormally rigid, due to thickening of the cartilages, and deposition in their structure of lime salts; the mucous membrane was much thickened, and the villi enlarged in places so as to resemble papilloma of five-sixteenths of an inch long and nearly as broad.

On each lateral plate of the thyroid cartilage (near the centre) and opposite to each other, were two points or areas of necrosis, of about the size of a sixpence, radiating from which was inflamed tissue graduated in intensity.

The sum total of the effect on the air way by the gradual change which had been going on in the cartilage and adjacent structures, together with the recent congestion and œdema was that only a slit of the smallest dimensions remained.

The notes were very brief and hurried, and I have not recorded the condition of the muscles, but if my memory serves me right, they were atrophied. I had expected a detailed account of the pathological condition seeing, that an interested pupil took the larynx immediately to College, all I obtained however, was that his professor would not believe that the mare had been doing the work stated, without great difficulty in breathing.

To myself this is the point of interest in the case, but the driver is positive in his statement; the horse-keeper so far as that is possible corroborates the same, and I know that the horses are closely watched, well cared for, and that my visits are not infrequent.

A FARRIERS' INSTITUTE.

By The Editor.

Once again we are behind-hand, and the *Live Stock Journal* is the first to give publicity to a scheme for the establishment of "An Institute of Horse-shoeing." Our contemporary says, "We welcome a scheme which has been designed by Professor Wortley Axe for the improvement of the art of farriery and for the education of shoeing smiths." It states that Professor Axe is seeking to obtain the mutual co-operation of tho Royal Agricultural Society, the Royal College of Veterinary Surgeons, and the Farriers' Company, and adds "We shall look forward with much interest to the conference which will soon take place between delegates of these several influential bodies." This is encouraging, and we may now anticipate a practicable outcome from Professor Axe's labours. The veterinary profession should carefully study the scheme which, of course, is as yet only a suggestion. It runs as follows:—

Constitution.

The institute shall consist of a patron, a president, six vice-presidents, and a board of governors of not less than thirty persons, besides a secretary and treasurer.

The educational department of the institute shall comprise a teaching, a examining, and a licensing section.

The teaching to be conducted by experienced veterinarians and shoeing smiths in the principal commercial towns, who shall deliver lectures and demonstrations to classes of intending graduates.

The examining body to be appointed by the Royal College of Veterinary Surgeons.

The licensing body to be the Farriers' Company.

The public to be applied to for subscriptions to inaugurate and carry on the work of the institute for the present.

Subscribers of 50 gs. to be governors of the institute.

Each annual subscriber of 5 gs. shall be entitled to send one pupil to receive a course of instruction at any of the local schools.

Each student shall pay a fee of not less than (sum to be named) for each course of instruction.

A registration fee of (sum to be named) shall be paid by each graduate before receiving the diploma of the institute, which shall be signed by the teachers, board of examiners, and the secretary, and Worshipful Master of the Farriers' Company for the time being.

From this it will be seen that the control of the Institute is vested in a board of governors whose only qualification seems to be a subscription of fifty guineas. This opens the door to a body of wealthy faddists who are not unlikely to wreck the whole thing. We do not approve running a trade in leading strings, we hope that the new body of practical and scientific farriers to be created will be allowed a voice in the direction and guidance of the Institute, and we would suggest that as their numbers increase they be represented on the governing body—say, to the extent of one-twentieth of that body.

We do not approve of the position assigned to the Royal College of Veterinary Surgeons—as simply appointing the examiners; and we see no mention of the Royal Agricultural Society. Our idea is that the Board of Governors or Council, or whatever name is assumed by the executive, should include ten members of the Royal Agricultural Society, ten members of the Royal College of Veterinary Surgeons, some provision for holders of the future certificates, and for subscribers of 50 guineas. No one should have anything to do with the Institute who has not either paid a subscription or passed an examination, unless it be an ornamental patron or president. The art of farriery is in its present condition chiefly from the interference of amateurs, and the apathy of those who should have

guided. Any scheme for its improvement must provide an arrangement by which farriers are first assisted to a better position and better knowledge, and then encouraged to mind their own business and take an active part in looking after its technical welfare. They have hitherto had to swim with a log round their necks, we now propose to substitute bladders; but let us provide for their ultimately swimming alone.

ABSORPTION OF ODOURS BY MILK.

By S. Beeson, M.R.C V.S., Hereford.

I have to-day had brought under my notice what is in my experience an unusually striking instance of the impregnation of milk with an agent taken into the body from the atmosphere.

Three cows were at pasture in a meadow adjoining a hopyard where the old "Bine" was being burned, the wind carried the smoke over the meadow, and the cows must necessarily breathe the smoke. They were taken home at night and milked as usual, and next morning the cream was found to taste quite strongly of the smoke, and it also has a peculiarly astringent effect on the pharynx.

I am sending you a sample by post as one can scarcely credit the amount of offensive matter contained in it without tasting it.

Two other cows kept at home were unaffected, and subsequent milkings of the three cows were quite sweet.

It seemed to me the circumstance might be worth recording.

EXTRACTS.

THRASHING OUT THE PLEURO QUESTION.

The Renfrewshire Agricultural Association is one of those societies whose directors are wise in their own generation. It is a flourishing and influential body, and generally contrives to secure, as their president for the year, some wealthy and highly popular gentleman who shall provide for the society the annual 'discussional dinner' which has now become a valuable fixture in the Scottish agricultural year. This year the society has elected as its president, Mr. C. Bine Renshaw, of Barochan, and the banquet on Thursday 14th inst. was on a scale of magnificence unparalleled in the history of the society.

The society had decided that the discussion on this occasion should be on pleuro, it was led off by a paper on the subject from Professor M'Call, while most of the leading lights in the veterinary profession in Scotland were present, and took part in the discussion.

From Professor M'Call's paper we extract the following:—

All specific diseases, in my opinion, owe their origin to specific living organisms and the chemical substances which they generate or excrete, and their joint action on the liquid and cells of the body. These organisms are indigenous to certain countries or districts; they will only live in certain animals, and, as a rule, they will only breed in certain tissues of that selected body. Many, if not most, of these organisms belong to the vegetable kingdom, are, indeed, vegetable parasites or fungi, and in being indigenous to certain countries, living in the bodies of certain races of animals, are they not. I ask, obeying the same laws as regulate developement and growth of the higher forms of vegetable life, and with which, as agriculturists, you are so familiar? No doubt there are present some gentlemen who believe that this lung affeetion can originate from other causes—from abuse in the transmission of cattle by steamships and railways; from exposure to cold in markets, auction sales, and from bad ventilation and filth in their habitations and surroundings. There are, no doubt, parties also present who do not believe in the propagation of the disease by infection or contagion, and who advocate and cite cases to prove a '*spontaneous origin*.' Now, let me address myself briefly but earnestly to all such. Sporadic or simple inflammation of the lung and its covering, with which, as I have already said, the disease under consideration is frequently confounded, and that, too, by veterinarians, may and does originate in the manner indicated, and hence may be spoken of as having a 'spontaneous origin': but specific diseases cannot originate from any or all such conditions, even if combined. It is a living organism which is the cause of the malady, and living organisms cannot be evolved out of lifeless organic or inorganic matter. True it is a low form of organism, but whether high or low, if possessed of life, it must have had a living parentage. Some, no doubt, are here who refuse to subscribe to any such doctrine of the origin of life, and pertinently ask, If this disease is dependent on a living being, and its propagation is by infection or transmission of the living being from diseased animals to sound, how did the first cow become infected, and from whence came the infecting agent or living organism? Instead of attempting to give a direct answer to these questions, I shall in turn put a case or two in point for answer, and shall intentionally selects objects with which all are familiar. I show you an acorn, out of which, as you know, the majestic oak is developed, and as it must be clear to you that the first oak could not have been developed from an acorn, which is the seed of an oak, how was it developed? or, in other words, how did the first oak originate? Again, I place before you an egg, out of which, if fructified, 'a chick' is produced, and as 'chicks' never appear without being preceded by eggs, it is said the chick originates from the egg: but I need scarcely say that the origin of the first chicken was by no such method, and while you may believe you do, you cannot explain or demonstrate how the first chicken originated. You must admit that their propagation and continuation on the face of the earth now is, and has been, by parentage; and when

you can explain how the first chick originated, I shall attempt, by using that information, to explain how the first specific organism of pleuro-pneumonia sprang into being.

Veterinarians in Ignorance of its Nature.

According to paragraphs and some rather pretentious articles which have appeared in various newspapers, veterinarians know nothing of the nature of this lung malady, and some of our medical friends desire that they be provided with funds to investigate its nature. Now, I do not object to any individual or body of men embarking on such an expedition; but, I ask, what has the medical profession done in the past to warrant such an application, or do they know so much more of the nature of specific diseases in general, or even of specific diseases in special in mankind, as to warrant their usurping the place of veterinarians? Let us cast a little light on this point, and with this object in view we will briefly contrast the specific disease in man, small-pox, with the specific disease in cattle, pleuro-pneumonia. Small-pox is classified by medicals as a specific disease, and so is pleuro-pneumonia by veterinarians, because both are highly infectious diseases, have a period of incubation, attack certain structures or organs, write specific lesions on these structures, are transmissible from diseased to healthy subjects by inhalation of the contagium, or by inoculation of the morbid products formed in the course of the malady. In both affections the inoculated malady is more benign than the natural malady, and without raising the question as to whether the so-called variolous and vaccinous blood-poisons are distinct or modified forms of the same blood-poison or contagium, in both diseases preventive inoculation has proven itself a success, provided the subjects inoculated had no spores or seeds of either malady in their system at the moment of inoculation. Now we come to the microscopic observations and their teachings or results. In the morbid products of small-pox and vaccine-pox, microbes or organisms belonging to the class micrococci have been found, and in the lung-lymph which we use for inoculation in pleuro-pneumonia micrococci have also been found; and thus far you observe the veterinarian knows just as much regarding the nature of pleuro-pneumonia in cattle as our medical advisers know regarding the nature of small-pox in man. An eminent medical authority, writing as to inoculation in pleuro-pneumonia, thus delivers himself: 'It is abundantly evident that in employing inoculation, *as at present practised*, we are working in the dark. We want to be certain whether the essential part of the virus is a living organism (?), what that micro-organism is, and upon what it grows, and whether it germinates rapidly or slowly. . . . These are questions of the *deepest* scientific interest and practical importance. They are matters about which we know practically nothing, and I think I am perfectly justified in saying that, until we do know *something* about them, we shall not advance one step beyond the stage in which we are at present.

But let us now touch on the points raised. It is asked, is the essential part of the virus of pleuro-pneumonia a living organism? In the meantime I, in return, ask, is the essential part of the virus of small-pox a living organism? I assert in neither disease can a positive opinion or answer be given, but in both diseases 'germs constitute the agency of production;' but the chemical substances produced in all probability give rise to the symptoms which indicate the disease. Without in the meantime stating dogmatically what the living organism of pleuro-pneumonia in all probability is, I shall refer to the work done in this direction by Veterinary Surgeon Poels and Dr. Nolen, of Rotterdam. These gentlemen, have conducted investigations and experiments on a most extensive scale, issued a report, a synopsis of which will be found in the *Veterinarian* of March 1887; and as my own observations and experiments rather tend to corroborate the views they have expressed regarding the specific character of the microbes found in pleuro-pneumonia, I shall read to you the concluding paragraph of their joint report: 'If we now review the results of these investigations, not only each one by itself, but looking at them at the same time in their connection with each other, namely, that the coccus we have described is always found in great numbers in the exudation products of lungs affected with pleuro-pneumonia, but not in healthy lungs; that the *same* micrococcus is also always found in the healthy reaction succeeding inoculation, and on being developed in pure cultivations can be successfully used for the purpose of inoculation; and, lastly, that the coccus can in a few days produce extensive pneumonic changes in a bovine animal, we think we are justified in concluding that *this coccus* is the contagium of pleuro-pneumonia.' These experiments, I may further mention, were made on 800 cattle, and a large number of rabbits, guinea-pigs, mice, and dogs. The lymph was taken from the lungs of sixty cattle in various stages of the disease, and the cultures were made with blood-serum, meat (flesh), meat extract, peptone gelatine, gelatine plates, potatoes, &c. Had time permitted I would gladly have referred to the excellent work performed by others having a similar object in view. . . . Undoubtedly micrococci and bacilli are present in the exudation of pleuro-pneumonia, and undoubtedly one or other is specific to the malady; but as we cannot transmit the *recognisable* lung lesions in any other practical way than by cohabitation of the diseased with the healthy, it follows as a necessary consequence that it is a most difficult point to decide, whether the pathogenic microbe of pleuro-pneumonia is a micrococcus or a bacillus.

But to proceed; in the body of the ox when inhaled the organism of pleuro-pneumonia will only grow and breed in the connective tissue of the lung, drawing its sustenance from the lymph-streams so numerous in this situation. If inoculated locally, *e.g.* on the tail, the microbes produce no local action for about ten days, and that action is confined to the tail or parts in its immediate neighbourhood, the lung never becoming inflamed, or presenting lesions such as are always seen in autopsy when the animal has contracted the disease by the natural method or

inhalation of the virus. Much has been made of this fact by those who refuse to believe in inoculation, but to my mind it is no objection to the value of preventive inoculation. Admitting for the sake of discussion, that when we inoculate we do not produce the disease, if the animal on being subjected to the crucial test of inhaling the virus can do so with impunity, it must be granted that inoculation did one of two things, viz:—it either induced the disease in a modified form, or it exhausted the body of the material naturally present in it, and on which the pathogenic microbe of pleuro-pneumonia lives and reproduces itself, and in either way or whatever way it results inoculation remains a success. Regarding its power of germinating and the time required, that varies just as the germinating of seeds which we sow. The shortest period of incubating and germinating, by inoculation of the virus, is ten days, and the shortest, and at the same time average period of incubating and germinating, by the natural method, is six weeks, and experimentally induced, I have found it so almost to a day. When a sound cow receives the contagium by breathing the air expired by a diseased cow (and all experimental evidence goes to prove that this is the only way the malady can be communicated) it produces, as I have said, a lung disease and an infectious malady; but when the disease by inoculation is grafted on the body of a previously sound animal, it reproduces no infectious malady. How much more than this, I ask, do our medical friends know regarding the contagium of small-pox and the protective influence vaccination exercises over it? In the pox on the body of the small-pox patient there are organisms destructive to human life. In the pox on the arm of the vaccinated subject there are organisms, not destructive to life, but destructive apparently to the small-pox organisms or the deadly poison they excrete, and if *first* implanted enable that individual to breathe with impunity an atmosphere loaded with small-pox organisms. Medical bacteriologists have failed as yet, I repeat, in singling out the organism of small-pox, or in growing it outside the body of the child or calf, and to keep it alive they have recourse to successive inoculations from calf to calf, or from child to child, and because they have as yet failed in doing so, and in demonstrating its life-history (all, no doubt, of great interest and value), are they prepared to be told that they are all groping in the dark, that they know 'practically nothing' about the malady, and that until all these points are cleared up vaccination should be discarded and men allowed to fall victims to small-pox? Jenner, I repeat, knew nothing of living organisms and their cultivation in the sense now known; but in substituting vaccination for inoculation he did more to conserve human life than any other man. And while I am an opponent to inoculation, on grounds yet to be stated, I cannot but admit, and do so with pleasure, that those gentlemen who have practised 'preventive inoculation' have thereby conserved the life of many an animal that under any other method of treatment would have fallen a victim to the lung plague.

The Slaughter Order, it is said, is a great failure. As a measure of extinction it is no failure, and its small success as yet is entirely due to its execution being left in the hands of so many individuals and parties having conflicting interests to serve and prejudices to satisfy. But how many of those individuals who advocated a slaughter policy prognosticated that a year or two would see the disease 'stamped out'? Not one individual known to me, and certainly I did not when giving my evidence before the Departmental Committee in London. I knew the disease too well, and the individuals in whose hands the Order was left to be worked out, to express so hopeful an opinion.

The opponents to wholesale slaughter, seeing, as they say, 'it has signally failed,' recommend slaughter of affected animals and inoculation of the other members of the herd. Now, the very fact of recommending and insisting on slaughter of all affected animals is a direct confession that inoculation is of no use in stopping the progress of the malady when once it has attacked its victim, and I desire that you will keep this point prominently before you in the discussion which is to follow. If inoculation can stay the ravages of pleuro-pneumonia when once contracted, then, I ask, why slaughter all affected or suspected animals, and only inoculate those believed to be sound? But to continue, inoculation is an undeniable preventive remedy. Theoretically you may work it out on paper to be otherwise, but in practice, and with no bias in its favour, it has proven itself to be, under our own observation, a reliable preventive agent. Given a sound animal, an animal that never breathed in an atmosphere where pleuro-pneumonia has existed, and that the animal be inoculated with genuine vaccine, it will prove itself proof to the invasion of the malady when placed in a cow-shed where pleuro-pneumonia exists, and thus compelled to breathe the virus. Now, if the veterinary surgeon, when an outbreak of pleuro occurs, could with certainty pick out all the affected animals and have them slaughtered on the premises, and all the sound cattle there and then inoculated with genuine vaccine, the disease would cease. But, unfortunately, in the incubative stage of the malady, which covers a period of six weeks at least, no veterinarian has as yet been able to devise a method for its detection. Further, that animal, although having the spores or seeds of the disease incubating (batching) in its lungs, will receive inoculation, and the part inoculated will present the same appearances as in an animal in whose lungs there are no seeds of disease. Still further, when an animal is attacked with this disease by the natural method, there is a marked tendency for the organisms to work together in the lungs, and for a sac or cyst or boundary wall to form outside their operations. When this sac has been completed, if the animal is robust, and the remainder of the lungs healthy, the fever gradually subsides, the temperature becomes normal, the disturbed breathing disappears, and as this portion of encysted lung may be buried deep in and surrounded by healthy lung, here again the veterinary surgeon is at sea, and fails in detecting the diseased animal. He inoculates such animals; the changes produced by the operation are the same

as on subjects having healthy lungs, and the animals in due course recover from the operation. They remain where they are, or are sold to other parties, it matters not which, if allowed to live; the day comes when the cyst wall bursts and opens into a bronchial tube, a new portion of lung is attacked, and now these animals give off the organisms in their breath, and again they become sources of infection, and wherever they go spread the disease. If any such animal remains in a herd, it will in due course give the malady to all fresh purchases, and in proof of this I will now cite my own experiences in one stock. . . . .

What I have stated are my principal objections to inoculation as at present carried out, and they appear to me insurmountable; and if slaughter of affected animals and inoculation of apparently sound (for no man can guarantee that) should be substituted for slaughter of all affected herds, then no inoculated animals should be allowed to leave the premises where inoculated, unless on a conveyance to the nearest slaughter-house. In town dairies such a procedure could be carried out without much inconvenience to the dairymen, and at a considerable saving to the community, but on farms where parties breed and graze cattle in the fields it is unworkable. If inoculation is to rid the country of pleuro-pneumonia, then it must be no half measure, but a system of inoculation whereby every calf born in the country or imported shall be subjected to the operation with as much regularity and certainty as children are vaccinated. Veterinarians are prepared to offer their services, and there are men in the profession able and willing to provide the lymph and supervise the whole operations; but have you thought of the number of persons, professional and non-professional, that will be required not only in carrying out the work of inoculation but also in preventing deception? Parents, as a rule, are willing and anxious to have their children vaccinated, and resistance and evasion is seldom practised; but I fear the evasions on the part of stock-owners would be many, and therefore the machinery required to make the system a perfect one could not but be attended with an enormous expenditure of money. Slaughter of whole herds, sound and unsound, is, I admit, a cruel and revolting policy, but you are shut up to it, or to the policy of universal preventive inoculation, for treatment of this disease in the usual sense of the term is of no avail. Which of them, then, shall it be? Speaking for myself and my profession, if only from a selfish point of view, I would say universal preventive inoculation, but the difficulties associated with it are, I fear, insurmountable, the expense enormous, and no country that has tried it has succeeded. All circumstances considered, would it not be our safest course in the meantime to memorialise the Minister of Agriculture to make the extinction of the disease and the granting of compensation the subject of Imperial legislation and control? I think so; and if the Government consent, then it will rest with them to decide whether they will continue to wage war against the malady by slaughter or by inoculation.

Principal WILLIAMS said the paper to which they had just listened was a most valuable one in every way. There were a lot of absurd ideas floating about in many people's heads in regard to this disease, such as the idea that contagious pleuro-pneumonia could originate otherwise than by inhaling the disease-germs breathed out by a diseased animal. There were many, in fact, who held that the disease could be induced by exposure to cold, and in the *Scotsman* of that day there had appeared a letter in which the writer urged that in order to keep down the disease something in the nature of first-class carriages should be provided for the conveyance of stock by railway. Now, it was quite true that a non-contagious form of lung disease could be brought on by exposure and cold, but contagious pleuro-pneumonia, depending as it did on the presence of minute organisms in the lungs, could only be induced by inhaling these germs when given off from the lungs of some animal already diseased. It was also well to warn them against the so-called cures for pleuro of which they occasionally heard No doubt there were numerous recoveries from it, but these were spontaneous recoveries, as the disease was not amenable to any treatment known to science. As to how to deal with the disease, they had separated into two great parties—one going for the wholesale slaughter of all stocks in which the disease had appeared, and the other approving of inoculation. If the disease could be arrested at its source, if they could trace the disease to the fountain head and there stop it by slaughter, it would be desirable to do so, but could they do that? That was the question. Professor M'Call had painted in glowing colours an ideal community of honest agriculturists, with all the local authorities pulling together and doing the right thing. Well, if they had reached that Utopian condition, he would look hopefully to the suggestion to stamp out pleuro in that particular way. But then they had a great variety of interests to deal with. There were the interests of the pure-stock breeders, the interests of the dairymen, and the interests of the different local authorities, and all of these interests were working in different ways. Therefore they had to do the best they could in the circumstances. He had been associated with the county of Mid-Lothian for many years as inspector, and he had seen inoculation prove most successful in stopping the ravages of the disease in hundreds, he might even say thousands, of cases in Edinburgh and the surrounding district. In fact, when inoculation was introduced, the loss to the community through the prevalence of pleuro was reduced to a very trivial sum. When pleuro broke out in any dairy the diseased cattle were slaughtered, and any animals showing symptoms were also slaughtered. Then the others were inoculated. Some of these inoculated animals might go down within the next three weeks, but after that time those remaining sound were in little or no danger of contracting the disease. These cattle were never sold until they were fat, and thus in Edinburgh a dairyman had the opportunity of carrying on his business even though he had the misfortune to buy a cow which proved to have the germs of the disease

about her. But since the Slaughter Order came into force, the expense of dealing with the disease had been enormously increased. In fact they were now spending thousands of pounds where only scores of pounds were spent before, and instead of being nearer the extermination of the disease they seemed to be farther off than ever. That very day there was a dairy in Edinburgh where 33 cows were being slaughtered as the result of an outbreak. In that same dairy two years ago there was a similar outbreak of disease. At that former outbreak two cows were slaughtered, and all the rest were inoculated, with the result that they all remained perfectly sound. The loss to the community from the first outbreak was only a few pounds, and the dairyman was able to carry on his business with little or no inconvenience, but now as the result of buying in fresh stock the whole 33 cows were being slaughtered outright. These were all big valuable cows, which would be valued at from £20 to £25, and being in full milk they would not fetch in the dead market over £10 or £12. The difference in value would, of course fall on the community. Now, if by means of inoculation they could stop the spread of the disease and enable the owner to carry on his business, and to sell all his cattle as fat, that was surely saving money to the community and preventing a deal of wasteful slaughter. They could easily, of course, prevent any of these animals being moved from that place except to the slaughter-house, so that it should be perfectly safe, not only to the owner but also to the community.

Principal Walley said this was a question which should be dealt with in the fullest possible manner. Twenty-seven years ago pleuro was killing off 50 per cent. more animals than it was doing now. It was then, however, that the foundation was laid for all our troubles of the present day, as it was allowed to spread all over the country. How long would it take to stamp out pleuro by inoculation? They would say how long will it take to stamp it out by slaughter? But then the Slaughter Order had not been properly worked. He gave it two years, provided it was carried out thoroughly. But it had not been carried out properly, simply because the Government had not adopted the necessary measures to discover existing centres of disease. In Edinburgh they had been slaughtering cattle for many months, and he told them that every one of these outbreaks came from one county in England, viz., Cumberland. He knew there was a Cumberland man there that night, and he did not care though there were five hundred Cumberland men there, he would say the same. Now, it would not have been a difficult matter to draw a cordon round that centre where these diseased animals came from, and to say no animals shall be moved from this centre until we have proof that it is safe to allow them to do so. Many months ago, he wrote to the Cumberland Local Authority and pointed out that a particular outbreak in Edinburgh was caused by a cow brought from that county, and the reply he received was that no disease could be traced there. Professor M'Call had given statistics to show that there was very little disease in Glasgow. That was an old, old tale of the Professor's—that Glasgow did not lose much, that Glasgow did not get pleuro. How was it, then, that they were always getting pleuro in Edinburgh? Well, for two years they had no pleuro in Edinburgh, and if they were put in the same position as Glasgow, he would undertake to say they would have no more pleuro than they had in Glasgow. But Edinburgh had to draw its supplies of dairy stock from a great number of places, and mainly from Cumberland and the north of England and Ireland, whereas the Glasgow dairymen got their supplies mainly from the neighbouring counties. They had been told by a former speaker that the Slaughter Order had immensely increased the spread of the disease. He asked, what had the Slaughter Order to do with the introduction or spread of the disease? The Slaughter Order was sweeping away the disease, and if it was but properly worked, the disease would be stamped out within twelve months. It might not be known to all that the actual cause of the disease staying so long amongst them was due to a large extent to cured or recovered cases—to cysts in the lungs. Only the other day there was an outbreak in Edinburgh, and he examined all the cows, picking out and killing two which he thought suspicious. There was nothing wrong, however, in these cases, but he knew there was an old case in the herd, and when the rest of the cows were slaughtered he found the old case, the cyst twelve months old from which the disease had sprung. Could they get rid of the disease so long as that system was kept up? He was constantly receiving letters from parties in foreign countries asking if there was disease in Scotland, as these parties were anxious to come across and buy stock in Scotland. And what could he tell them? He could only say that the country was very far from being clear of the disease, and consequently these buyers did not come to purchase the breeding stock which they wanted. They were just shutting up the foreign market against themselves, and it served them right. Did they want pleuro among them at all? What about the quarantine of ninety days at Quebec, or the six or nine months' quarantine of the States? He thought the Government should take up this matter vigorously, or otherwise pleuro would remain a curse to the country, and a slur upon our nationality in more ways than one.

Principal Williams said the speaker who had just sat down had stated that a former speaker said that the Slaughter Order had increased the spread of the disease. What he said was that the Slaughter Order had increased the expense incurred in dealing with the disease, and he never for a moment implied that the Slaughter Order had increased the pleuro in their midst.

Principal Walley said he might have misunderstood what was said, but he thought something was said to that effect, and if not by Principal Williams in this meeting, certainly by others elsewhere.

Mr. Rutherford spoke at length on the success with which inoculation had been carried out in Australia and New Zealand, as to whether inocula-

tion was advisable in this country, he would go a long way to meet their friends on the other side. If they stamped out this disease, he would be exceedingly glad, and he would give them half a dozen years to stamp it out, and be done with it; but if they could not do it, then future generations would not stand this continual slaughtering, and scientific progress would not allow it to be carried on. He held that inoculation was as effective as slaughtering, and a deal more economical. Circumstances had made him an inoculator years ago, when he saw its effects in Australia at a time when he was very sceptical about it; but the facts were driven down his throat, and after he returned to this country he advised his friends—the dairymen—to adopt the system, so as to give it a fair trial, and it had proved a remarkable success. He had been often tempted to reply to the strictures of Professor M'Call upon his system in regard to that Glasgow case, of which the Professor had made so much. But the cases to which the Professor referred, of animals contracting the disease after being inoculated, were marked by him (Mr. Rutherford) as being affected animals twelve days after the operation. He would grant the Professor that if this was the only case in which inoculation had been tried, the Professor had floored it; but he had dealt with hundreds of outbreaks where the success of the operation was triumphant and complete. He candidly admitted that there was much to be learned on the subject of inoculation, and he thought it would be well if scientists who were all working for the same end would try to help, instead of baiting, each other. He thought it was eminently a subject on which further investigation was desirable, and he hoped that the society would lend its aid to have the matter more fully inquired into.

Professor M'FADYEAN said that two important questions had to be answered regarding the eradication of pleuro-pneumonia. The first of these was—Is its eradication possible? and the second was—What would be the probable cost? Upon each of these heads he had information that, he thought, might be of interest to the meeting. Holland had cleared itself of pleuro-pneumonia, and that was a very hopeful fact for us, as in that country the disease had had even a firmer foothold than it had in Great Britain. He took the opportunity to correct a misstatement that had been made by Principal Williams, to the effect that inoculation had been compulsory in Holland since 1878, and that the system of inoculation had stamped out the disease. Inoculation was never compulsory in Holland. It was compulsory in one district in Holland—the Spoelings district—between 1878 and 1884, while compulsory general slaughter was at the same time in operation over all the rest of the country. In 1882 there were 184 cases of pleuro in the Spoelings district (which had a cattle population about equal to that of the county of Renfrew), and only eleven for all the rest of Holland. In 1884 the authorities stopped compulsory inoculation in the Spoelings district, and enforced compulsory slaughter of both diseased and suspected over the whole country, with the result that the disease was stamped out within two years. The cost of stamping out in Holland was a little over three million francs. Professor M'Call had said that if inoculation was to be the plan tried, they must inoculate every beast in the country. Well, that would be a very expensive plan, as it was found that one per cent. died of the operation. Now, the cattle population of Scotland was about one million, and if they sacrificed one per cent. of this number the loss would be far heavier than the present mortality from pleuro. In France the system belauded by Principal Williams and Mr. Rutherford was in full swing, but what was the result? Since 1882 they had paid over three million francs in compensation, and they did not seem one bit nearer the extermination of the disease than they were before. Principal Williams said the veterinary world was divided into two great parties on this question—one advocating wholesale slaughter, and the other inoculation. He ventured to disagree with him there again. They were divided into one very large party and one very small party, the latter of which embraced the Principal and the half-dozen or so who agreed with him on that point.

Professor M'CALL briefly replied on the discussion, and the proceedings terminated with cordial votes of thanks to the Chairman and the speakers.—*North British Agriculturist.*

THE VETERINARY SURGEONS ACT.

On Nov. 9th the following par. appeared in the "Chemist and Druggist."

154/18. *Gundulph.*—The terms of the Veterinary Surgeons Act are very comprehensive. An unregistered person may not use any name, title, addition, or description which implies that he is a veterinary surgeon or a practitioner of veterinary surgery, or any branch thereof, or specially qualified to practice the same. But we do not think the description "veterinary chemist" could be brought within the prohibited degrees.

On the 23rd the subject was continued by the following letter:—

The Title "Veterinary Chemist."

SIR,—We observe you say in reply to "Gundulph" in your issue of November 9, "We do not think the description veterinary chemist could be brought within the prohibited degrees," and we do not see any further reference to the matter in last Saturday's *Chemist and Druggist*, so write to say that, whether legally or not, the R.C.V.S. *does* object to the use of the title by persons unconnected with that body. Having described ourselves as "veterinary chemists" in the advertisements of our "Bird's Botanic Essence" and other equine medicaments, we received a circular from the secretary calling our attention to the fact that we were not qualified to make use of the title; and, although we had great doubts as to whether the college could legally prevent our use thereof, we did not consider the matter sufficiently important to contest, and accordingly consented to

eliminate the word "veterinary" from our advertisements and future publications where its connection would give any impression that we were holders of a qualification from the college.

Thinking our experience might be interesting and useful to your readers, and apparently a slight addition to your already encyclopædic fund of valuable information,

We are, yours truly, BIRD & STOREY.

42 Castle Street, Oxford Street East, W., Nov. 19.

Our Registration Committee seem to be doing some good useful work, and we trust they may continue to successfully enforce the Act.

INFLUENZA IN GLASGOW.

In reference to the prevalence of influenza we find that Glasgow also has suffered. In the veterinary column of the *North British Agriculturist* we read:—

During the past fortnight a serious outbreak of that form of equine influenza which has received in America the title of 'pink eye' has appeared in Glasgow. The outbreak has been characterised, as many of its predecessors have been both in this country and in America, by the suddenness of its appearance, the epizootic rapidity of its spread, and its attacking all classes of horses under all manner of surroundings. Seventy cases have already occurred in one large stud, and forty in another, while in smaller establishments numerous attacks are also reported.

The onset of the disease has generally been sudden. Animals that have done their previous day's work without apparent difficulty, and have cleared up their supper, are discovered next morning with legs filled and stiff, eyelids swollen, and the conjunctival membrane exhibiting the characteristic congestion and discoloration. Rapid nervous and muscular prostration ensue. The patient is languid and depressed, the heart action is feeble; appetite fails; the secretions of the skin, kidneys, and bowels are impaired; temperature rises to 104 degs., occasionally to 106 degs. Fahr., and sometimes remains at such a height for several days; the pulse generally ranges from 60 to 70 beats per minute, but if the case is a bad one, or the patient much disturbed, it may rise to 90 or 100. The mortality in Glasgow has ranged, it is stated, from 5 to 10 per cent., which is more than double the proportion usually lost. Some patients have died from exhaustion, others apparently from the œdematous swellings about the head and throat, interfering with respiration.

It is difficult to explain how such a disorder has thus suddenly arisen and rapidly spread. Glasgow for several years has been singularly free from influenza attacks. We have no sufficient information as to the first cases, nor have learned whether they had been in contact with horses brought from any of the larger English cities, and from other localities where this or other types of influenza have recently prevailed.

ON BUTTER-MAKING.

Miss Jessie Blackshaw, the well-known instructress in butter-making, gave an interesting address at Sleaford last week, in connection with a practical and theoretical demonstration, under the auspices of the Eastern Counties Dairy Association. Miss Blackshaw remarked that it was generally supposed that good butter was made by churning alone. But that this was a serious mistake could not be too strongly impressed upon the butter-maker, seeing that the character of butter was in a great measure fixed before the cream was put into the churn, and nothing that was done afterwards could remedy any mistake. The great object in the treatment of cream was to bring it to a proper state of ripeness. This was produced by certain ferments—from the atmosphere and other causes—which brought about chemical changes. If checked at the proper point, this fermentation would be found of great advantage, for much more butter and of a far better quality could be obtained from ripened cream than otherwise. During this process certain risks are incurred, in order to avoid which the cream required careful attention and manipulation. The first changes were produced by fermentation, which must not be allowed to go too far, or the milk would be soured. It was simply necessary to bear in mind that these were really the first steps leading to decomposition, and unless butter was produced by these chemical actions it would be of a very inferior flavour, and, in some cases, quite rancid. There were several ways of encouraging or checking fermentation, the chief of which was temperature. A very high temperature destroyed fermentation, whilst a very low temperature would prevent its growth. By controlling the action of fermentation they could bring the cream to its right stage of ripeness. The temperature should be about 60 deg. when churning took place twice or three times a week, but when they only churned once, 58 or 59 deg. was the best temperature. Miss Blackshaw would advise everyone to churn twice a week, and if churning took place oftener than three times, the ripening might be hastened and kept up to 60 or 64 deg. If kept at a higher temperature, the butter would probably be found not to be firm, and would not keep well. In very warm weather there were methods of keeping down the temperature, such as churning early in the morning, or placing cloths dipped in cold water round the cream tin. Ice might also be used to advantage. When cream would not ripen, the addition of a little sour milk or buttermilk would bring about the desired result. Or they could place a tin containing water heated to 110 degs. in the cream, but any higher degree of temperature would spoil the cream. When cream was taken from milk, and daily increased until there was sufficient to make a churning, they must take care not to churn until twelve hours after the last quota of cream had been added. These twelve hours must elapse in order to give all the cream time to reach the same stage of ripeness. And even then the ripening would not be equal unless the cream is frequently

stirred. Cream should be thoroughly stirred at least twice a day, and, in addition to observing certain conditions which often defeated the most skilful management, the dairy must not be too damp or too dry, as these conditions were visible in butter, injuring both its colour and keeping qualities. Or if a strong light, such as the rays of the sun, fell upon the cream, it would cause white specks in the butter. The popular idea of churning was to pour cream into the churn and go on churning till butter came, but it was possible to churn good firm butter or soft butter, and less or more of it. Nor did it depend upon what kind of churn they used, for good butter had been made in all kinds of churns. The wood of churns should be without any flavour that could be communicated to the butter, close-grained, and free from all unnecessary corners or crevices that might interfere with the proper cleansing of the churn or the extraction of the butter. Nor should there be any brass or iron nuts inside liable to corrode on coming in contact with water or cream. The opening should be large enough to facilitate the removal of the butter and the cleansing of the churn; in fact, the simpler its construction the better. Before being used, the churn should be washed with boiling water and then with cold, and after churning should be washed with cold water and then scalded. Cream should always be tested, and the temperature brought to the desired point before the churning was begun, the limit being from 55 deg. to 60 deg. Thin cream might be churned at a higher temperature, but the churn would never be more than half full, or the process would be unduly prolonged. As this was partly a chemical process, a certain amount of air was essential. The speed ought to be considered, for whilst a barrel churn should be turned at the rate of forty or fifty revolutions a minute, for an end-over-end churn sixty or seventy revolutions would not be too fast. Starting slowly at first, the speed should be gradually increased, finishing slowly. The butter-milk should be drawn off when the butter was the size of shot, and the butter washed with plenty of cold water until the water was quite free from butter-milk. The butter should then be placed in sufficient brine to cover it and be allowed to remain there a few minutes, brine being far better to use than salt. Rubbing must be avoided, as it mixed the water into the butter rather than expelled it.—*Farmer and Stockbreeder.*

"IF PASSED SOUND."

An action of much interest to sporting men was before the Dublin Courts last week and terminated on Saturday night. It was brought by Mr. A. E. M'Cracken, a woollen merchant, in Co. Kildare, against Mr. John Jones, Epsom Lodge, Epsom, to recover £1000, the price of the racehorse Lord Chatham, sold to the defendant in Paris on the 10th of June last, after running in the races at Auteuil. The plaintiff's case was that the defendent, after seeing the performance of the horse, agreed to give £1000 for him if he were passed sound. The plaintiff told him that there were others bidding for the horse, but asked Mr. Jones if he would buy him if he was passed sound by a veterinary surgeon? The defendant replied that he would, and the horse was brought over to Epsom, examined by a veterinary surgeon, and passed. The defendant, however, afterwards refused to carry out the bargain on the ground that the horse had a seedy toe. Riders, grooms, farmers, and veterinary surgeons who had known and examined the horse, gave evidence to the effect that the horse had no seedy toe when they saw him up to June last, that he could not have had such a defect without its being noticed, and that he could not have run as he did at Paris if it then existed. The case for the defendant was that the surgeon who examined the horse at Epsom did not take off the plates, and that when they were removed it was found that the horse had a seedy toe, and two of the nails in the plate which covered it were dummies, having only the heads. Evidence was given to the effect that a horse with a seedy toe could run without showing any lameness. At the close of the case the jury, after ten minutes' deliberation, returned a verdict for the plaintiff.

GOVERNMENT VETY. DEPARTMENT.

CONTAGIOUS DISEASES IN ANIMALS.

Reported in Great Britain and Ireland during the week ended November 16th, 1889.

Pleuro-pneumonia.—In Great Britain 7 fresh outbreaks of this disease were reported, 5 in England and 2 in Scotland. These outbreaks occurred in the counties of Cumberland, Essex, Lancaster, London, Norfolk, Forfar, and Perth. The number of cattle attacked was 21, of which 8 were in England and 13 in Scotland. There were also 144 healthy cattle which had been exposed to infection slaughtered. In Ireland 2 fresh outbreaks were reported, 1 in North Dublin, and 1 in the Dunshaughlin Union, Co. Meath; 3 cattle were attacked and 52 healthy ones in contact were slaughtered.

Anthrax.—In England 3 fresh outbreaks of anthrax were reported in the counties of Cambridge and Leicester, 7 animals were attacked, 2 of which died and 5 remained alive at the end of the week. No cases of this disease occurred during the week in either Scotland, Wales, or Ireland.

Swine-Fever—The swine-fever return for the week is the lowest so far as outbreaks are concerned of the present year. Only 63 outbreaks were reported, all of them in England, 445 swine were attacked, 192 diseased swine were killed, 150 died, 53 recovered, and 358 remained alive at the end of the week. In Ireland only 7 fresh outbreaks of this disease were reported, and 17 swine attacked.

Glanders and Farcy,—Of the former disease 18 fresh outbreaks were reported, viz., 1 in Kent, 15 in London, and 2 in Middlesex, 25 horses were attacked, 22 of which were in London, 1 in Kent, and 2 in Middlesex. Only 4 outbreaks of farcy were

reported and 11 horses attacked, all of them in London. No cases of either glanders or farcy occurred in either Scotland, Wales or Ireland during the week.

Rabies.—In England 9 cases of rabies (all in dogs) were reported in the week. They occurred in the counties of Herts, Kent, Lancaster, London, Surrey, and York (W.R.). In Ireland 7 cases of rabies were reported, 5 in dogs, in the counties of Down, Cork, and Limerick; also 2 cattle in Monaghan and Cork.

NOTES AND NEWS.

Death of a V.S.

We have to record the death of Mr. Henry Vaughan Lloyd, of Denbigh, North Wales, at the early age of thirty-two. The deceased gentleman had been ailing for some months, but the end came rather suddenly, on Thursday the 21st inst. The funeral was a very large one, the deceased being much respected and well known in the Vale of Clwyd. His professional brethren practising in the district attended, viz., Messrs. Simpson, Ruthin, Kyffyn, and Edwards, Abergele. The deceased graduated April 16th, 1879.

The Bologna Sausage.

The excitement caused throughout Italy by the detection of extensive frauds in the Bologna sausage manufacture is spreading. Other cities, notably Florence, are demanding an immediate inspection of the same articles of food. The public, says the *Nazione* of that city, are entitled to some such inquiry in their behalf as has just yielded such startling results in Bologna. Instead of pig's flesh popularly supposed to form the main ingredient in the Italian sausage, horseflesh is that which is really used—horseflesh, moreover, of more than dubious origin, taken from animals that have died of infectious disease, and even that in an advanced state of decomposition. According to the *Tribuna* there has been collusion between certain sausage manufacturing firms and the veterinary authority, the latter winking at frauds which it ought to have exposed.

CORRESPONDENCE.

DR. FLEMING AND THE TRAMWAY.

SIR,

Referring to the recent correspondence in *The Veterinary Record re* Army Veterinary Surgeons and Private Practice, I think it only right to lose no time in informing you that, *at the request* of the Directors of the North Metropolitan Tramway Company Dr. Fleming has sent in his resignation as a salaried veterinary surgeon to the Company. Trusting that you will notice the fact in your columns in such way as you deem desirable, as a justification of the course which I ventured to take in the matter.

Faithfully yours, F. M. H. J.

Veterinary Medical Societies—Addresses.

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Hon. Sec: Mr. J. Armstrong, M.R.C.V.S., Penrith, Cumberland

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Hon. Sec: Mr. T. Assheton Smith,
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Meetings, First Thursday in each month, except August and September, First Avenue Hotel, Holborn, at 7 p.m.

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Pres: Mr. C. Cunningham, M.R.C.V.S.,
Slateford, nr. Edinburgh.
Hon. Sec: Mr. Rutherford, M.R.C.V.S.,
12 Bread Street, Edinburgh.

SOUTH DURHAM AND NORTH YORKSHIRE V.M.A.
Pres: Mr. J. Nettleton, Northallerton.
Hon. Sec: Mr. W. Awde, Stockton-on-Tees.

SOUTHERN COUNTIES V.M.S.
Pres: Professor W. Pritchard,
5 Regents-park-road, London, N.W.
Hon. Sec: Mr. E. A. Hollingham,
79 Anerley Road, London, S.E

WESTERN COUNTIES V.M.A.
Pres: Mr. J. P. Heath, M.R.C.V.S., Southernhay, Exeter.
Hon. Sec: Mr. W. Penhale, F.R.C.V.S., Barnstaple, Devon.

WEST OF SCOTLAND V.M.A.
Pres: Mr. A. Robinson, F.R.C.V.S.,
37 West Burn-street, Greenock, N.B.
Hon. Sec: Mr. James Weir.

YORKSHIRE V.M.A.
Pres: Mr. W. Lodge, M.R.C.V.S., Dewsbury.
Hon. Sec: Mr. W. F. Greenhalgh, M.R.C.V.S., Hunslet, Leeds.
Meetings, Last Friday in Jan., April, July, and October.